

What is claimed is:

1. A device for reading out an optical code, said device comprising:
  - a camera;
  - 5 an image memory for storing images taken by said camera;
  - an image processor for decoding an optical code contained in an image taken by said camera;
  - 10 image-taking means for obtaining a plurality of images continuously with said camera under specified image-taking conditions in response to a specified image-taking command and causing the obtained images to be stored on said image memory; and
  - 15 image-decoding means for sequentially selecting one of the images stored on said image memory in a specified order, causing said image processor to make an attempt to decode an optical code contained in the selected image, and outputting results of decoding, if the attempt to decode any of the stored images is successful, without making the attempt on the remaining images.

2. The device of claim 1 further comprising order-changing means for changing said specified order according to history of the order in which successfully decoded images were taken in the past.

20 3. The device of claim 1 wherein said camera has a variable shutter speed, includes an illuminator adapted to illuminate a target object and is adapted to vary lighting conditions of said target object by said illuminator, and wherein said specified image-taking conditions are defined by at least one selected from the group consisting of 25 the shutter speed of said camera and said lighting conditions by said illuminator.

4. The device of claim 2 wherein said camera has a variable shutter speed, includes an illuminator adapted to illuminate a target object and is adapted to vary lighting conditions of said target object by said illuminator, and wherein said specified 30 image-taking conditions are defined by at least one selected from the group consisting of the shutter speed of said camera and said lighting conditions by said illuminator.

5. The device of claim 3 wherein said image-taking conditions vary while the plurality of images are taken continuously.

5 6. The device of claim 3 wherein said image-taking conditions are conditions considered to be optimum conditions determined by comparing quality of images that were successfully decoded earlier.

10 7. A device for reading out an optical code, said device comprising:  
a camera;  
an image memory for storing images taken by said camera;  
an image processor for decoding an optical code contained in an image taken by said camera;

15 image-taking means for obtaining a plurality of images continuously with said camera under specified image-taking conditions in response to a specified image-taking command and causing the obtained images to be stored on said image memory;

20 image-decoding means for sequentially selecting one of the images stored on said image memory in a specified order, causing said image processor to make an attempt to decode an optical code contained in the selected image, and outputting results of decoding as successful decoding, if the attempt to decode at least one of the stored images is successful; and

interval-changing means for changing interval at which the plurality of images are to be taken by said image-taking means according to the number of successfully decoded ones of the plurality of images taken continuously in the past.

25 8. The device of claim 7 wherein said interval-changing means serves to change the intervals according to a specified interval.

30 9. The device of claim 7 wherein said interval-changing means serves to change the intervals according to the number of images taken continuously by said

image-taking means while keeping constant the total time taken for taking said plurality of images continuously by said image-taking means.

10. A device for reading out an optical code, said device comprising:  
5 a camera having a variable shutter speed;  
an illuminator for illuminating a target object under variable lighting conditions;  
an image memory for storing images taken by said camera;  
an image processor for decoding an optical code contained in an image taken by  
said camera;

10 image-taking means for obtaining a plurality of images continuously with said  
camera under specified image-taking conditions in response to a specified image-taking  
command and causing the obtained images to be stored on said image memory, said  
image-taking conditions being defined by at least one selected from the group consisting  
of the shutter speed of said camera and the lighting conditions of said illuminator; and

15 image-decoding means for sequentially selecting one of the images stored on said  
image memory in a specified order, causing said image processor to make an attempt to  
decode an optical code contained in the selected image, and outputting results of  
decoding as successful decoding, if the attempt to decode at least one of the stored  
images is successful.

20 11. The device of claim 10 wherein said image-taking conditions vary while  
the plurality of images are taken continuously.

12. The device of claim 10 wherein said image-taking conditions are  
25 conditions considered to be optimum conditions determined by comparing quality of  
images that were successfully decoded earlier.

13. A device for reading out an optical code, said device comprising:  
30 a camera having a variable shutter speed;  
an illuminator for illuminating a target object under variable lighting conditions;  
an image memory for storing images taken by said camera;

an image processor for decoding an optical code contained in an image taken by said camera;

image-taking means for obtaining a plurality of images continuously with said camera while varying image-taking conditions and causing the obtained images to be stored on said image memory, said image-taking conditions being defined by at least one selected from the group consisting of the shutter speed of said camera and the lighting conditions of said illuminator;

image-decoding means for making attempts to decode all of the plurality of images stored on said image memory and causing successes and failures of said attempts to be recorded; and

optimizing means for comparing quality of images that were successfully decoded and thereby outputting the image-taking conditions corresponding to the image determined to have best quality as optimum conditions.

15. 14. The device of claim 13 further comprising a display, said display serving to display the image determined to have best quality and associated data corresponding thereto.

15. 15. The device of claim 14 wherein said associated data include lighting pattern of said illuminator.

16. 16. A method for reading out an optical code, said method comprising the steps of:

25. obtaining a plurality of images continuously with a camera under specified image-taking conditions in response to a specified command;

sequentially selecting and attempting to decode one of said images in a specified order; and

30. outputting results of decoding, when one of the images is successfully decoded, as a successful decoding without further attempting to decode the remaining ones of the images.

17. The method of claim 16 further comprising the step of changing said specified order according to history of the order in which successfully decoded images were taken in the past.

5 18. A method for reading out an optical code, said method comprising the steps of:

obtaining a plurality of images continuously with a camera under specified image-taking conditions in response to a specified command;

10 sequentially selecting and attempting to decode one of said images in a specified order;

outputting results of decoding as a successful decoding, if at least one of the images is determined to have been successfully decoded; and

15 changing interval at which the plurality of images are to be taken in the step of obtaining images according to the number of successfully decoded ones of the plurality of images taken continuously in the past.

19. A method for reading out an optical code, said method comprising the steps of:

20 obtaining a plurality of images continuously with a camera under varying image-taking conditions in response to a specified command;

sequentially selecting and attempting to decode one of said images in a specified order; and

outputting results of decoding as a successful decoding, if at least one of the images is determined to have been successfully decoded.

25 20. A method of reading out an optical code, said method comprising the steps of:

obtaining a plurality of images continuously with a camera in response to a specified command while varying image-taking conditions;

30 making attempts to decode all of the plurality of obtained images; and

comparing quality of images that were successfully decoded and thereby outputting the image-taking conditions corresponding to the image determined to have best quality as optimum conditions.